METHOD OF DEPOSITION A COMPOSITIONALLY-GRADED COATING SYSTEM

Abstract of Disclosure

A process for depositing a ceramic coating system for Si-containing materials, particularly those for articles exposed to high temperatures. The process is particularly applicable to depositing a compositionally-graded coating system comprising multiple ceramic layers with differing compositions, including a dense, strain-tolerant, vertically-cracked YSZ-containing ceramic layer deposited on a ceramic layer having a composition that is a mixture of YSZ and either mullite or BSAS. The process entails depositing the YSZ-containing ceramic layer using a plasma spraying technique while maintaining the substrate at a temperature so as not to form horizontal cracks in the coating system, but still maintain the dense vertically-cracked structure of the YSZ-containing ceramic layer for strain tolerance.

Figures